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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,556	07/11/2003	Carl M. Mahabir	202TR008A	5165
37535	7590	08/10/2005	EXAMINER	
NOVEON IP HOLDINGS CORP. 9911 BRECKSVILLE ROAD CLEVELAND, OH 44141-3247			HOOK, JAMES F	
			ART UNIT	PAPER NUMBER
			3754	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

TW

Office Action Summary	Application No. 10/618,556	Applicant(s) MAHABIR ET AL.	
	Examiner James F. Hook	Art Unit 3754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/04; 1/04; 10/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

It is noted that the claims set forth abbreviations of high density polyethylene as both "HDPE" and "DPE", it is recommended that the occurrences of "DPE" be replaced with the normal abbreviation for such, HDPE as used elsewhere. Likewise, it is normally recognized in the art that chlorinated polyethylene is typically abbreviated as "CPE", it is suggested that applicant may want to change the abbreviation from "PE" which normally is used for polyethylene to CPE which is typically used for chlorinated polyethylene to avoid confusion.

Specification

It is not clear whether terms "Sioplas" or "Monosil" are trademarked names, therefore an objection will be made to these terms as being trademark names, however, should applicant have evidence that such are not trademarked names please provide such with any response to the office action and the objection will be dropped.

The use of the trademarks "SIOPLAS" and "MONOSIL" have been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 12 recites the limitation "the crosslinked PEX" in line 4. There is insufficient antecedent basis for this limitation in the claim prior to it's use in the claim, where the PEX layer is not positively recited till later in the claim.

Claim 14 recites the limitation "the crosslinked PEX" in line 4. There is insufficient antecedent basis for this limitation in the claim prior to it's use in the claim, where the PEX layer is not positively recited till later in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Palmlof. The patent to Palmlof discloses the recited crosslinked polyethylene composition (PEX) which inherently would have improved resistance to oxidation and UV light due to having the same limitations of applicants material in absence of any claimed additional structure to achieve these results, where the PEX is provided with 1-5% carbon black by weigh of the polymer composition, the carbon black used can be furnace black, channel black, and others, where the PEX is crosslinked using a peroxide, and where antioxidants can be to the composition as well.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 9, 10, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmlof in view of Behr. The patent to Palmlof discloses all of the recited structure above with the exception of disclosing the size of the particles of carbon black used, and the thickness of the PEX layer. It is considered an obvious choice of mechanical expedients to form the PEX layer of any thickness required by the environment in which the tube is to be used as such would only require routine experimentation to arrive at optimum values, and it would have been obvious to one skilled in the art to use routine experimentation to arrive at the optimum thickness of the PEX layer in Palmlof as such is merely a choice of mechanical expedients. The patent to Behr discloses that it is known in the art to utilize carbon black in a PEX composition where the carbon blacks used can be furnace blacks and channel blacks having grain sizes of 100-1,000 Å which converts to 10-100 nm. It would have been obvious to one skilled in the art to modify the carbon black in Palmlof to be of a size which can be less than 20 nm as suggested by Behr, where Behr sets forth that furnace black and channel blacks used in PEX can be formed of particles in this range, thereby setting forth the size of these known carbon blacks used in PEX layers which would insure proper crosslinking of the PEX thereby preventing premature failure and saving money.

Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palmlof in view of Skarelius. The patent to Palmlof discloses all of the recited structure above with the exception of disclosing using the SIOPLAS method of silane grafting for crosslinking PEX.

Claims 1-4, 9, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosewicz in view of Behr and Palmlof. The patent to Kosewicz discloses the recited pipe comprised of a layer of PEX which is provided with carbon black, and an inner liner of uncrosslinked polyethylene (PE) where based upon the discussion of the PE layer blocking peroxides from the PEX layer is stating therefore that the PEX layer is crosslinked using peroxide. The patent to Kosewicz discloses all of the recited structure with the exception of stating the amount of carbon black used in the PEX, the thickness of the PEX layer, and the size of the carbon black particles used. The patents to Behr and Palmlof disclose the structure set forth above. It would have been obvious to one skilled in the art to modify the carbon black in Kosewicz to be of a size which can be less than 20 nm as suggested by Behr, where Behr sets forth that carbon blacks used in PEX can be formed of particles in this range, thereby setting forth the size of these known carbon blacks used in PEX layers which would insure proper crosslinking of the PEX thereby preventing premature failure and saving money. It would have been obvious to modify the PEX in Kosewicz by supplying a specific amount of carbon black specifically 1-5% carbon black which teaches a range extending below 2%, as suggested by Palmlof where such would insure a proper amount of carbon black in PEX layers utilized in forming multilayer tubes where such would

prevent premature failure of the material and would thereby save money. It is considered an obvious choice of mechanical expedients to form the PEX layer of any thickness required by the environment in which the tube is to be used as such would only require routine experimentation to arrive at optimum values, and it would have been obvious to one skilled in the art to use routine experimentation to arrive at the optimum thickness of the PEX layer in Kosewicz as such is merely a choice of mechanical expedients.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosewicz in view of Behr and Palmlof as applied to claims 1-4, 9, and 18-23 above, and further in view of Stine. The patent to Kosewicz as modified discloses all of the recited structure with the exception of forming the inner liner of a specific type of PE, however, the use of HDPE is considered a known type of polyethylene used in the art for making PEX layers as suggested by Palmlof, and Kosewicz is teaching forming the uncrosslinked liner of the same PE material as the PEX layer, therefore it would have been obvious to one skilled in the art based upon this teaching to form the liner layer of Kosewicz of a HDPE material the PEX from a base HDPE material as well as suggested by Palmlof where the thicknesses are considered obvious choices of mechanical expedients requiring only routine experimentation to arrive at optimum values. The patent to Stine discloses that it is old and well known in the art to form inner liner layers of uncrosslinked PE's including a chlorinated polyethylene (CPE). It would have been obvious to one skilled in the art to modify the liner PE layer of Kosewicz as modified to be formed of CPE as such is a known equivalent type of PE

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used in a non crosslinked layer of a multilayer hose having a crosslinked layer as well as suggested by Stine where such teaches equivalent types of PE used for liner layers where such would be chosen based upon the environment the tube is to be used which would prevent premature failure of the layer and thereby save money. The use of any thickness or density material is considered to be merely choices of mechanical expedients where only routine experimentation is required to find optimum working values for a specific application.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosewicz in view of Behr and Palmlof as applied to claims 1-4, 9, and 18-23 above, and further in view of Skarelius. The patent to Kosewicz as modified discloses all of the recited structure with the exception of providing an extra layer of PEX and using a SIOPLAS method to crosslink the PEX. The color of the outer layer is considered an obvious choice of mechanical expedients. The patent to Skarelius discloses that it is known in the art to utilize a SIOPLAS method of crosslinking PEX utilizing silane and/or peroxide, and where additional layers can be provided including an oxygen barrier and other layers of PEX where melt bonding can be used to connect layers. It would have been obvious to one skilled in the art to modify the PEX in Kosewicz as modified to be crosslinked using a SIOPLAS method utilizing silane as well as peroxide to crosslink the layer and to provide another layer of PEX melt bonded together as suggested by Skarelius, which sets forth that the SIOPLAS method of using silane and/or peroxide can be used to crosslink PEX utilized in multilayer conduits where such provides an improved crosslinked material and providing the PEX cover

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layer would protect the inner layers, which would save money in replacement costs due to premature failure.

Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosewicz in view of Palmlof and Skarelius. The patent to Kosewicz discloses all of the recited structure with the exception of thicknesses of layers and densities of materials, gel level, providing an outer layer of PEX with no carbon black, using HDPE as the PE used for the liner, providing an oxygen barrier layer, suggesting how much carbon black is used in the PEX layer loaded with carbon black, and color coding. The color, thickness, and density of the materials used are all considered to be choices of mechanical expedients where one skilled in the art would only require routine experimentation to arrive at optimum values for use in specific environments and it would have been obvious to one skilled in the art to use routine experimentation to arrive at optimum values as such is a choice of mechanical expedients. It would have been obvious to modify the PEX in Kosewicz by supplying a specific amount of carbon black specifically 1-5% carbon black which teaches a range extending below 2%, and to form the PE of HDPE to form the layers where such is a known PE used to form a PEX layer as suggested by Palmlof where such would insure a proper amount of carbon black in PEX layers utilized in forming multilayer tubes where such would prevent premature failure of the material and would thereby save money. It would have been obvious to one skilled in the art to modify the hose in Kosewicz by providing an oxygen barrier to further help prevent oxides from permeating the layers, and to provide another layer of PEX outside of the layers to protect the inner layers as suggested by Skarelius

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where such would prevent premature failure of the tube thereby saving money in replacement costs, and undesirable oxides from permeating the layers.

Conclusion

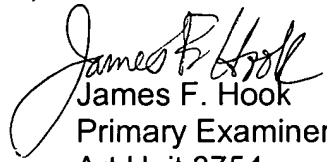
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references to Dalal, Backman, Gilmont, Boonstra, Johansson, and Zimmer disclosing state of the art multilayer tubes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James F. Hook whose telephone number is (571) 272-4903. The examiner can normally be reached on Monday to Wednesday, work at home Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mar can be reached on (571) 272-4906. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


James F. Hook
Primary Examiner
Art Unit 3754

JFH